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IN THE CLAIMS:

Please amend the claims to read as follows:

1.   (Currently Amended) A statistic~~al~~ multiplex transmission system for use in a network

which includes a first local area ~~ATM~~ asynchronous transfer mode (ATM) network having a

plurality of first terminal ~~device~~ devices, a second local area ATM network having a plurality

of second terminal ~~device~~ devices, and a public ATM network connected to said first and

second ATM networks, comprising:

a first multiplex gateway device for connecting said first local area ATM network and

said public ATM network; ~~and~~

a second multiplex gateway device for connecting said second local area ATM

network and said public ATM network~~;~~ ,

wherein said first and second multiplex gateway devices ~~receiving~~ receive

~~transmission~~ ATM transmission signals from said first and second local area ATM networks,

respectively, and ~~performing~~ perform a statistic~~al~~ multiplexing process of said ~~transmission~~

ATM transmission signals to generate transmission statistic~~al~~ multiplex signals, and

transmitting said transmission statistic~~al~~ multiplex signals to said public ATM network.

2.   (Currently Amended) A statistic~~al~~ multiplex transmission system as claimed in claim

1, wherein said first and second multiplex gateway devices transmit said transmission

statistic~~al~~ multiplex signals by ~~use of~~ a piece-wise constant bit rate transmission system

having a transmission rate after statistic~~al~~ multiplexing process which varies in a

predetermined time interval.

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3.   (Currently Amended) A statistical multiplex transmission system as claimed in claim 2, wherein: said first and second multiplex gateway devices receive said transmission statistical multiplex signals to separate said transmission statistical multiplex signals, and generate a plurality of receiving ATM signals, and

wherein said first and second multiplex gateway devices transmit said receiving ATM signals to said first and second terminal ~~device~~ devices through said first and second local area ATM networks, respectively.

4.   (Currently Amended) A statistical multiplex transmission system as claimed in claim 3, wherein said first and second multiplex gateway devices comprise:

first means for calculating statistical information represented by a mean rate and a peak cell rate of ATM cells in said ~~transmission~~ ATM transmission signals; and

second means for performing a multiplexing processing of said ATM cells according to said statistical information, and for transmitting said transmission statistical multiplex signals to said public ATM network.

5.   (Currently Amended) A statistical multiplex transmission system as claimed in claim 4, wherein said second means includes:

third means for conducting rate addition after statistical multiplexing according to said statistical information and for determining said rate addition result;

fourth means for calculating a required piece-wise constant bit rate on the basis of said rate addition result, and for performing cell multiplex control on the basis of said piece-wise constant bit rate; and

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fifth means for transmitting said transmission statistical multiplex signal according to said

cell multiplex control.

6.   (Currently Amended) A statistical multiplex transmission system as claimed in claim

5, wherein said fifth means receives said transmission statistical multiplex signal to separate said

transmission statistical multiplex signal, and

generates a receiving ATM signal.

— Please add the following new claims:

7.   (New) The system of claim 1, further comprising:

a control unit operably connected to said first multiplex gateway device,

wherein the control unit re-negotiates a transmission rate of said transmission statistical

multiplex signals after said statistical multiplexing process, in a predetermined time interval,

through adaptive control of parameters acquired from the transmission statistical multiplex

signals.

8.   (New) The system of claim 1, wherein the plurality of first and second terminal devices

are International Telecommunications Union (ITU) recommendation H.310 compliant.

9.   (New) The system of claim 1, further comprising:

a statistical multiplexing control unit, operably connected to one of the first and second

multiplex gateway devices, for performing a rate addition after said statistical multiplexing

process according to statistical information from said multiplex signals.

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10.   (New) The system of claim 9, further comprising:

a piece-wise constant bit rate control unit, operably connected to the statistical multiplexing control unit, for receiving the rate addition calculation from said statistical multiplexing control unit, and

calculating a piece-wise constant bit rate for transmission of said statistical multiplex signals to said public ATM network.

11.   (New) The system of claim 9, further comprising:

an ATM transmission line unit, operably connected to the statistical multiplexing control unit, for calculating statistical information of ATM cells in said ATM transmission signals, and

transmitting the statistical information and the ATM cells to an ATM cell multiplexing/demultiplexing unit.

12.   (New) The system of claim 11, wherein the ATM cell multiplexing/demultiplexing unit is operably connected to one of the first and second multiplex gateway devices, and performs cell multiplexing control on the basis of the piece-wise constant bit rate, and

wherein the ATM cell multiplexing/demultiplexing unit transmits the transmission statistical multiplex signals to the statistical multiplexing control unit.

13.   (New) A statistical multiplex transmission system for use in a network, comprising:

a first local area Asynchronous Transfer Mode (ATM) network having a plurality of

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first terminal devices;

a second local area ATM network having a plurality of second terminal devices;

a public ATM network connected to said first and second ATM networks;

a first multiplex gateway device for connecting said first local area ATM network and said public ATM network;

a second multiplex gateway device for connecting said second local area ATM network and said public ATM network,

wherein said first and second multiplex gateway devices receive ATM transmission signals from said first and second local area ATM networks, respectively, and perform a statistical multiplexing process of said ATM transmission signals to generate statistical multiplex transmission signals, and transmitting said statistical multiplex transmission signals to said public ATM network, and

wherein said first and second multiplex gateway devices transmit said statistical multiplex transmission signals by a piece-wise constant bit rate transmission system having transmission rate after statistical multiplexing process which varies in a predetermined time interval.

14.   (New) The system of claim 13, further comprising:

a control unit, operably connected to said first multiplex gateway device,

wherein the control unit re-negotiates a transmission rate of said transmission statistical multiplex signals after said statistical multiplexing process, in a predetermined time interval, through adaptive control of parameters acquired from the transmission signals.

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15.   (New) The system of claim 13, wherein the plurality of first and second terminal

devices are International Telecommunications Union (ITU) recommendation H.310

compliant.

16.   (New) The system of claim 13, further comprising:

a statistical multiplexing control unit, operably connected to the first or second

multiplex gateway device, for performing a rate addition after said statistical multiplexing

process according to statistical information from said multiplex signals.

17.   (New) The system of claim 16, further comprising:

a piece-wise constant bit rate control unit, operably connected to the statistical

multiplexing control unit, for receiving the rate addition calculation from said statistical

multiplexing control unit and calculating a piece-wise constant bit rate for transmission of

said statistical multiplex signals to said public ATM network.

18.   (New) The system of claim 17, further comprising:

an ATM transmission line unit, operably connected to the statistical multiplexing

control unit, for calculating statistical information of ATM cells in said ATM transmission

signals, and transmitting the statistical information and the ATM cells to an ATM cell

multiplexing/demultiplexing unit.

19.   (New) The system of claim 18, wherein the ATM cell multiplexing/demultiplexing

unit is operably connected to one of said first and second multiplex gateway devices, and

performs cell multiplexing control on the basis of the piece-wise constant bit rate, and

wherein the ATM cell multiplexing/demultiplexing unit transmits the transmission

statistical multiplex signals to the statistical multiplexing control unit.

20.   (New)   A method for statistical multiplex data transmission in an asynchronous

transfer mode (ATM) network, comprising:

connecting a first local area ATM network to a plurality of first terminal devices;

connecting a second local area ATM network to a plurality of second terminal

devices;

connecting a public ATM network to said first and second ATM networks;

connecting a first multiplex gateway device to said first local area ATM network and

said public ATM network;

connecting a second multiplex gateway device to said second local area ATM network

and said public ATM network;

receiving ATM transmission signals from said first and second local area ATM

networks into said first and second multiplex gateway devices, respectively; and

performing a statistical multiplexing process of said ATM transmission signals to

generate transmission statistical multiplex signals, and transmitting said transmission

statistical multiplex signals to said public ATM network,

wherein said first and second multiplex gateway devices transmit said transmission

statistical multiplex signals by use of a piece-wise constant bit rate transmission system with

a transmission rate that varies in a predetermined time interval after the statistical

multiplexing process.

21.   (New) The method of claim 20, further comprising:

performing a rate addition after said statistical multiplexing process according to

statistical information from said multiplex signals.

22.   (New) The method of claim 20, further comprising:

receiving the rate addition calculation from said statistical multiplexing control unit

and calculating a piece-wise constant bit rate for transmission of said statistical multiplex

signals to said public ATM network.

23.   (New) The system of claim 22, further comprising:

calculating statistical information of ATM cells in said ATM transmission signals,

and transmitting the statistical information and the ATM cells to an ATM cell

multiplexing/demultiplexing unit.

24.   (New) The system of claim 23, further comprising:

performing cell multiplexing control on the basis of the piece-wise constant bit rate.